

# Food as a Weapon



COL Gary Vroegindewey, Assistant Chief, Veterinary Corps

# Fifty-fifth World Health Assembly

## Resolution WHA 55.16:

“...serious concern about threat against civilian populations by deliberate use of biological, chemical and nuclear agents.

...such agents can be disseminated by food.”

*Terrorists Threats to Food-Guidance for Establishing and  
Strengthening Prevention and Response Systems*  
Food Safety Department-World Health Organization 2003

# Colin Powell



“The network is teaching its operatives how to produce ricin and other poisons. ...less than a pinch of ricin, eating just this amount in your food, would cause shock, followed by circulatory failure.”

Secretary of State, Colin Powell at the UN Security Council

# Historical Examples

1915 – A German agent in New York City produced tetanus cultures with which he contaminated animal food supplies of ships carrying horses to Europe. Approximately 3500 horses were affected.



Cavalry Detachment—Rough Rider Drill—Military Academy, West Point, U. S. A.  
Copyright 1902 by Underwood & Underwood.

# Historical Examples

- **1931** – Japanese officers attempted to kill members of the League of Nations Commission in Manchuria by lacing fruit with cholera bacteria.
- **1978** – Poisoned Israeli fruit turned up in Dutch and German markets. In the majority of instances oranges imported from Israel had been injected with metallic mercury. In all, seven children were treated for mercury poisoning.

# Historical Examples

1984 – In The Dalles, Oregon, an outbreak of *Salmonella* poisoning that occurred during a two week period was linked to the salad bars of eight popular U.S. restaurants.

Over 700 were affected but there were no fatalities. It took over a year to link the religious organization with the outbreak



Bhagwan Shree Rajneesh,  
Rajneeshpuram, Ore.



# Recent Examples

Nov 2000

“The investigation of Scottsdale Thurway Burger King showed that teen employees...routinely added urine, human spit, caustic oven cleaner, and *Comet* cleaner with bleach to *Whoppers*, fries and other food served to customers at the restaurant.”



# Grocery store worker accused of poisoning beef

GRAND RAPIDS, Mich. (AP) -  
Dec 2002

“A former supermarket employee was indicted on charges of poisoning about 200 pounds of ground beef with insecticide and sickening more than 40 people.”



Randy Jay Bertram  
Bryon Center  
Family Fare Supermarket



# Al Qaeda Warns Of Threat To Water Supply

Washington Times  
May 29, 2003

Abu Mohammed al-Ablaj told al-Majallah magazine that

"al Qaeda [does not rule out] using sarin gas and poisoning drinking water in U.S. and Western cities."



# Maine Arsenic Poisoning 2003



CARIBOU, Maine (Reuters) –

“FBI agents have been called in to help the criminal investigation of an arsenic poisoning at a Maine church that killed one man and sickened at least 15 other parishioners..”

2 May 2003

# Food poisoning kills scores in China



“His victims - many of them schoolchildren - died after eating breakfast snacks from the tiny fast-food outlet, on Tangshan's main street.

There were appalling scenes at the snack shop as people who ate the food there collapsed in violent convulsions, some bleeding from the eyes and mouth.”

300 ill, 42 died

September, 2002

# Contextual Shift

From accidental to purposeful food poisoning

# Impacts of Foodborne Agents

- Psychological
- Economic
- Operational

# Psychological

October 25, 2001

Taleban 'plotting to poison  
food aid'

From Roland Watson in  
Washington



“The Taleban may be plotting to poison humanitarian food supplies in Afghanistan and blame America, the Pentagon claimed yesterday.

The Pentagon said that it was “categorically false” that America would tamper with food supplies.”

# Economic

March 2002

Holten, Kansas.

"When accounts of these (Foot and Mouth Disease) suspicions were broadcast, panic ensued and the cattle futures market plummeted.

Eventually, the truth came out, but not until the cattle industry took an estimated **\$50 million hit.**"





# Economic

Chilean Grape – Cyanide Scare-1989

Recall of all Chilean fruit from Canada and US.

Over **\$300,000,000** cost and 100 shippers and growers bankrupt.



# Operational

## Soviet 40<sup>th</sup> Army in Afghanistan

- Over 25% unavailable for duty due to disease.
- Oct-Dec 1981 entire 5<sup>th</sup> Motorized Rifle Division combat ineffective when more than 3,000 men simultaneously with hepatitis.
- 76% of all Soviet troops were hospitalized for disease, in 1988 the breakdown is 12.9% Shigella, 6.1% amoebic dysentery, 50.5 % viral hepatitis.



# Food Safety vs Food Security

- **Food Safety** refers to the wholesomeness of the food product.
- **Food Security** refers to the processes and procedures used to prevent accidental or purposeful contamination.

# Food Chain



**Producer**



**Processor**



**Transport**



**Distributor**



**Preparer**



**Server**



**Consumer**

# Risk Points

- Any point where a person can have **access** to food.
- The highest risk points for tactical and strategic operational basis are at the **preparation and serving** stages.
- Psychological and economic damage can occur **at any level** due to either the threat or occurrence of food-borne agent that decreases the confidence in the food system. (Tylenol)

# Relative Food Risks

**Low:** Solid dry foods, foods requiring high temperature processing and foods that are transported in sealed containers such as cans or Tray-packs.

**High:** Bulk liquid foods (milk) and leafy vegetables and foods that are not highly processed or transported in non-sealed containers.

# Foodborne Threats

- **Biological**- Bacteria, Virus, Protozoa, Toxins
- **Chemical**- Heavy metals, organic compounds
- **Radiological**



# Food Safety and Security Program- A2D2..... not R2D2

- Awareness
- Access
- Deterrence
- Detection



# Awareness

- National
- DOD
- Command
- Unit
- Individual



# Awareness

Peter Chalk  
policy analyst with RAND

The fact that the United States has not experienced a major food-related disaster is a more a matter of luck than design.

“There is little real appreciation for either the threat or the potential consequences,”



# Awareness

Henry Parker  
USDA, ARS

**“America is exceedingly  
vulnerable to agricultural  
bioterrorism.**

**It is hard for American citizens  
to imagine a world where the  
availability of food radically  
changes for the worse.”**

# Access



# Access





# Access





# Deterrence



# TG188



## **U.S. ARMY FOOD AND WATER VULNERABILITY ASSESSMENT GUIDE**

**TG 188  
14 January 2002**

Prepared by:  
U.S. Army Center for  
Health Promotion and  
Preventive Medicine

In Coordination With:  
Department of Defense  
Veterinary Service  
Activity



# Operational Risk Management



# HACCP

TABLE VII  
GENERAL PROVISIONS  
SUBPART I – FOOD SECURITY

21 CFR 110.80

		C R I T I C A L	M A J O R	O B S E R V A T I O N
ITEM	REQUIREMENT			
11	Appropriate measures taken to screen employees. (Sec 110.80)			
12	Reasonable precautions taken to control physical access to premises. (Sec 110.80)			
13	Reasonable precautions taken to control physical access to different functional areas of the establishment. (Sec 110.80)			
14	Raw materials and packaging/packing materials received in original, intact containers and protected from potential tampering (contamination, adulteration, etc.). (Sec 110.80).			
15	Manufacturing operations conducted under conditions and controls necessary to minimize the potential for tampering. (Sec 110.80).			
16	End item(s) maintained under controls during warehousing and distribution that will protect the food item(s) and its container(s) against potential tampering. (Sec 110.80).			
17	Protocols and training in place to recognize and respond to food security violations. (Sec 110.80)			

# Detection

- **Visual inspection**- Conveyance, Packaging, Product.
- **Testing**- Origin, Transit, Storage, Preparation.  
Rapid Food Diagnostics in field, 520<sup>th</sup> TAML, FADL.
- **Syndromic Surveillance**- FoodNet, eLexNet, PulseNet,  
ProMed, New Programs, WHO/FAO  
Codex Alimentarius Commission.

# Detection- Origin

- Product examined for tampering or contamination.
- Visual, destructive sampling and testing.





# Detection- Distribution

Vehicles, containers and warehouses examined for security. Locks and seals used.

Packaging examined for tampering.

Visual, destructive sampling, testing.





# Detection- Field

Visual evaluation of packaging and product.

Destructive sampling.

Testing.



# Testing

## Random testing-

Both testing cycles and targets are FOUO. Screening tests are generally category specific.

For example:


enterobacteriaceae vs. E. coli O157:H7

## Targeting sampling-

Based on credible threat. Increases in range of products, sample types and includes specific agents.

Three levels of testing: Field Screening, Theater Presumptive, Reference Laboratory Confirmative.





# Syndromic Surveillance and Epidemiological Analysis

- **Syndromic surveillance** in medical treatment facilities will provide early detection of possible contaminants.
- **Epidemiological** support in early detection can either confirm contamination and minimize further damage or dispel rumors and restore confidence in the food supply.

# The Bottom Line

Food is **extremely vulnerable** to accidental and intentional contamination.

A2D2 program will minimize risks and minimize value of **Food as a Weapon.**

# Lessons Learned ?

“The conclusion seems inescapable that our military veterinary service should be prepared to combat intentionally implanted epizootics,....

The possibilities of microbic warfare are so full of unknowns that the science of bacteriology should not fall asleep under the anesthetic of fancied security.”

Veterinary Medical Magazine 1942

# DOD Veterinary Service

